STORM WATER SERVICES OFFERS HANDS-ON SCHOOL PRESENTATIONS

In Wilmington, storm water runoff does not go to a treatment plant. Instead, storm water runoff & the pollution in it, flows into the Cape Fear River or Intracoastal Waterway - untreated. Storm Water Services offers school presentations using the Enviroscape, a scaled-down watershed model, that demonstrates the connection between storm water runoff and water quality in our local waterways. The Enviroscape presentation covers these topics:

- water pollution sources and prevention
- what a watershed is and how it functions
- the connection between wetlands and water quality
- how runoff contributes to flooding, erosion, and water pollution
- personal responsibility for protecting the environment

Presentations are geared to match NC Standard Course of Study goals & objectives. Presentations compliment science subjects such as: weather, the water cycle, erosion, water pollution, ecosystems, water quality and the lithosphere. It can also be useful in middle school social studies classes for units on urbanization or environmental protection. Call 341-5895 to schedule a presentation.

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STORM WATER WATCH

STORM WATER WATCH

ANNUAL PROGRESS REPORT

FALL 2002

A Publication of the City of Wilmington's Storm Water Services

CITY-MAINTAINED STORM WATER FACILITIES

13,000	CATCH BASINS & MANHOLES
250+	MILES OF PIPE
125+	MILES OF OPEN DRAINAGE (DITCHES, CREEKS, AND CHANNELS)
11+	MILES OF CULVERTS UNDER ROADS
145+	ACRES OF RETENTION PONDS (RANDALL POND & SILVER STREAM)
	GREENFIELD LAKE
	LOVE GROVE TIDEGATES

Inside This Issue

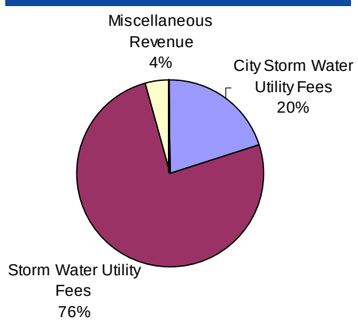
STORM WATER UTILITY FEES: WHERE DOES YOUR MONEY GO?

Funding for storm water management comes from the Storm Water Service fee included on your utility bill. The fee is based on the amount of impervious (hard) surface area on a property. Storm Water Services budgets storm water utility fees based on the cost of providing services, providing maintenance to the storm drainage system and funding drainage improvement projects throughout the City.

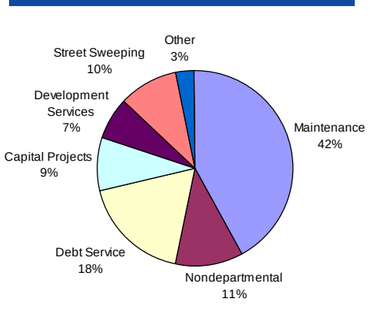
So where exactly does your utility fee money go? Storm water utility fees pay for capital projects or improvements that require construction or repairs beyond standard maintenance. These projects are necessary when the existing storm drainage system is inadequate and can result in flooded streets, homes and businesses or impaired water quality. Capital projects recently completed include Gillette Drive, Pine Valley Country Club and Park Avenue. Capital improvements comprise 27% of the Storm Water Utility budget. (See page 2 for a capital projects update.)

City-maintained storm water facilities include 13,000 catch basins and manholes, 250 miles of pipe, 125 miles of ditches, creeks and channels and 11 miles of culverts. These drainage structures require regular maintenance in order to function optimally. Utility fees pay for maintenance activities including street sweeping, pipe and culvert cleaning, ditch cleaning, replacing and repairing drainage structures, repairing cave-ins, mowing right-of-ways and practicing preventative maintenance. 52% of the Storm Water Utility budget is used for maintenance to the storm drainage system.. (See page 3 for maintenance information.)

Storm Water Management Fund Revenues FY 01-02



Storm Water Management Fund Expenditures FY 01-02



Storm Water Capital Projects

Improving Drainage and Water Quality

Storm Water Services is dedicated to the cost-effective, comprehensive management of the public drainage system and storm water runoff. This includes long-range planning, public outreach & education, preventative maintenance, drainage improvements and capital projects. Capital projects are improvements that require construction or repair beyond standard maintenance. They are often large in size, involving entire neighborhoods or streets. These projects are necessary when the existing storm water drainage system is inadequate and can result in flooded streets, houses and businesses. Capital projects also strive to improve water quality whenever possible. A capital project often replaces old, deteriorated or inadequate drainage structures with new infrastructure such as pipes, culverts and channels. The Storm Water Utility provides dedicated funding and staff resources for planning, designing and constructing capital projects.

COMPLETED PROJECTS

Several drainage improvement projects were completed from FY00-02. Listed are some of those projects:

Gillette Drive The final phase of this project involved completion of the underground storm water piping system in the Forest Hills neighborhood.

Pine Valley Country Club Stream Restoration In cooperation with New Hanover Tidal Creeks Program and NC SeaGrant, 1,100 linear feet of stream was restored on the Pine Valley Country Club Golf Course.

Park Avenue Major drainage improvements included completion of a piping outfall, a bioretention area for treating storm water runoff and a bicycle path.

Manly Ave. & 43rd. Street Extended the drainage system to provide relief from street flooding.

Airlie Road & Hunters Trail The drainage system was extended to provide relief from flooding in these 2 areas of the City.

41st & Cedar Avenue Drainage improvements were conducted to relieve flooding of property.

Current Projects

Greenville Loop Bridge This project will address deteriorated culverts at Riley's Branch under Greenville Loop Rd.

Heidi Drive The neighborhood of Winter Park experiences flooding problems in the area of Heidi Drive. New drainage improvements will relieve periodic flooding in the area.

Lions Gate/Plaza East Drainage improvements in this area will reduce flooding by replacing inadequate infrastructure with new, larger infrastructure.

Longstreet Stream banks will be stabilized in the Pine Valley neighborhood between Stonewall Jackson Dr. and the Pine Valley Country Club.

Mineral Springs This project will improve the existing storm drainage infrastructure and relieve the potential for major flooding on Dawson Street near Wrightsville Avenue.

Market Street/Inland Greens Flood reduction is a priority for this project which will replace existing culverts with new, larger culverts and inlets from Cardinal Drive Ext., Inland Greens Dr. to Market St.

Market Street/Northwoods Dr. Drainage improvements in this area will improve the connectivity and capacity of the existing drainage system along both sides of Market St. and Northwoods Dr.

Market Street Relief This project will correct existing drainage problems in the area of 18th St., 19th St., 20th St. and Market Street. It will involve installation of new infrastructure, redirecting storm water runoff flow and installation of a storm water wetland in Wallace Park to provide treatment for storm water runoff.

Marsdens Branch Priority of this project is to stabilize stream banks between Winston Blvd. and Randall Pond.

Rileys Branch Streambank stabilization and culvert improvements will be made from Park Ave. to Arbor Way and culvert improvements will be made in the area of 51st St. and Largo Ct.

Seagate This project will alleviate flooding issues on Oleander Drive near the Seagate Fire Department.

STORM WATER MAINTENANCE

Storm Water Operations and Management is responsible for maintaining the public drainage system.

Preventative maintenance of the public drainage system includes street sweeping, slope mowing, pipe cleaning and keeping primary drainage routes free of dirt and debris. Maintenance crews also repair damaged drainage structures such as catch basins, storm drains and cave-ins. Cave-ins are the result of potholes caused by collapsed pipes or runoff washing away part of the ground under a street.

Maintenance is usually performed during fair weather, however, storm water crews go into response mode during and after storms. During storms, weak links in the drainage system can be identified. If an area is flooding, garbage and debris may be blocking a pipe or culvert. Sometimes crews clear obstructions with equipment, but oftentimes, workers must clear clogs by hand. Storm Water Utility fees enable the City to repair and maintain the City's storm drainage system.

Maintenance crews often clean dirt and debris out of storm drains by hand.

This debris was cleaned out of a storm drain after a recent storm. The blocked storm drain caused streets, homes & businesses in the area to flood.

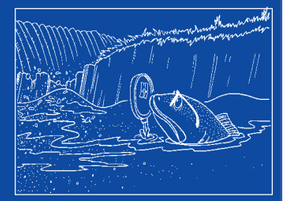
Storm Water Utility Maintenance Comparisons

FY98-99 thru FY00-01

**Increase in maintenance activity in FY99-00 due to Hurricane Floyd.*

Maintenance Description	Unit	FY 98/99	FY 99/00*	FY 00/01	FY 01/02
Clean Structures	Each	11,990	12,143	9,069	6,922
Clean Lines	Linear ft.	336,716	406,966	260,231	315,716
Cave-in Repair	Each	235	470	497	314
Structure Repair	Each	105	70	121	118
Construct Structures	Each	32	4	42	39
Reset Structure Covers	Each	322	238	198	289
Replace Structure covers	Each	162	198	192	174
Ditch Cleaning (hand)	Linear ft.	178,674	2,557,692	307,554	470,683
Slope Mowing	Linear ft.	938,379	859,788	502,642	564,023
Right-of-Way Mowing	Acres	147	123	175	181
Culvert Cleaning	Each	383	632	162	757
Sweep Streets	Miles	9,157	11,400	13,310	15,685
Street Sweeping Disposal	Truckloads	409	545	773	886

City-Wide Retention Pond Inspections



Two semi-annual compliance inspections for storm water detention facilities were completed in January 2002 and July 2002. These inspections were performed in order to ensure compliance with City maintenance standards. In January 2002, 235 facilities were inspected with 22 of those facilities requiring maintenance. In July 2002, 240 facilities were inspected with 54 of those facilities requiring maintenance.

The degree of maintenance required for the majority of facilities was minimal. This indicates that many of the maintenance problems encountered could be easily reduced if property owners would do inspections of their facilities on a monthly basis and after large rainfall events, as required under the conditions of City and State permits.

The inspection completed during the winter months of 2002 found fewer storm water facilities out of compliance probably due to dormant aquatic species, ground covers, and woody vegetation that seem to proliferate and thrive during the warmer months. Many of the common problems found during the July inspection included overgrown vegetation, blocked outlet structures caused by trash or vegetative debris and erosion of pond slopes.